

ABSTRACT OF THE DISCLOSURE

A method and apparatus for simultaneous voice and data (SVD) service in mobile communication system are disclosed. SVD service can be provided by designating a new voice RLP frame type and adding the new voice RLP frame type in the RLP frame transmittal standard for packet data in CDMA mobile communication system. Further, by designating the new SVD service option or additional signaling message exchange, the signaling procedures or multiplexing and de-multiplexing procedures used for SVD service can be simplified. Thus, mobile terminals and base stations, which could not provide SVD service, can be enabled to provide SVD service by performing SVD call processing between mobile terminals and base stations with only one service option.